EP-1113
Prospective evaluation of factors associated with weight loss in patients undergoing radiotherapy
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Purpose/Objective: To identify which factors influence weight loss in patients undergoing radiotherapy.
Materials and Methods: 74 patients were evaluated prospectively. Weight loss during radiotherapy and one month after treatment were analyzed. Parameters such as tumor stage, age, chemotherapy, tumor site and Eastern Cooperative Oncology Group score (ECOG) were analyzed to evaluate their influence in weight loss. All patients received supportive care with oral nutritional supplementation (ONS) and dietetic counseling.
Results: There were 65 (79.8 %) men and 15 (20.2 %) female. Mean age was 62.5 years (range 39-85). Weight loss was evaluated weekly during radiotherapy and one month after treatment. A total of 46 (65.7%) patients lost weight throughout radiotherapy, with a median weight loss during treatment of 4.73 kg (SD±3.91) which corresponds to a 6.55% (SD±4.84) net reduction from their baseline weight. One month after treatment, 45 (66.2%) patients had lost weight, with a median weight loss of 4.96 kg (SD±4.04), which corresponds to a 6.84% (SD±5.24) net reduction from their baseline weight. A total of 52 patients (70.2 %) received chemotherapy. Median weight loss during treatment was 3.1 kg (SD±4.90) and 0.6kg (SD±3.49) respectively, for patients receiving chemotherapy and patients who did not (p = 0.068). Head and neck (HN) patients had a median weight loss of 3.3 kg, and the remaining patients had a weight loss of 0.6 kg (p=0.028). Stage III-IVpatients lost more weight during radiation than stage I-II patients (p=0.005). No significant differences were found according to age. Multivariate analysis was performed to evaluate the association of these parameters with weight loss during radiotherapy. Head and neck tumor site (p<0.05) and the use of chemotherapy (p=0.011) were considered as independentrisk factors. When multivariate analysis was performed to evaluate the association of same variables with weight loss one month after treatment, the use of chemotherapy (p=0.009) and ECOG 2-3 (p=0.026) were considered as independent risk factors.
Conclusions: Nutritional status and clinical parameters suchas tumor location (especially HN), chemotherapy and ECOG, should be evaluated prior to radiation therapy because these factors can influence weight loss during radiotherapy and also one month after treatment. Despite using ONS and dietary counseling patients lost weight during treatment. These findings further support the importance of weight control in patients undergoing radiotherapy. Future research evaluating the most effective nutritional intervention to avoid weight loss will help us optimizing the management of these patients.

ELECTRONIC POSTER: CLINICAL TRACK: STEREOTACTIC RT

EP-1114
Image guided stereotactic re-irradiation for isolated local recurrent primary prostate cancer
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Purpose/Objective: To evaluate the outcome of stereotactic re-irradiation (SR-RT) for isolated local recurrent primary prostate cancer after external beam radiotherapy.
Materials and Methods: Our experience started between May 2007 and December 2009, in collaboration with CyberKnife Center CDI, Milan: 19 patients (with prostate or prostate bed recurrence in 15 and 4 pts, respectively) were treated with CyberKnife (Accuray, Sunnyvale, CA)–based stereotactic radiotherapy (CBK-SRT), and these data have been recently published (B.A. Jereczek-Fossa Int. J. Rad. Oncol. Biol. Phys., Vol. 82, No. 2, pp. 889–897,2012). In all these patients, [11C]choline positron emission tomography/computed tomography (PET/CT) was performed. The median CBK-SRT dose was 30 Gy in 5 fractions. Progression free survival rate at 30 months was 25%. These promising preliminary results prompted us to continue the study at our Institution when, at the end of 2011, Advanced Radiotherapy Center ARC started. New machines dedicated to stereotactic radiotherapy and hypofractionated protocols have been implemented (CyberKnife and Vero).
Results: Between March and September 2012 4 patients with locally recurrent prostate cancer have been treated with image guided SR-RT. In all pts PET/CT and biopsy was performed before treatment. The total dose was 30 Gy in 5 fractions. Up till now, SR-RT was well tolerated (non acute events). Biochemical response was observed in all pts.
Conclusions: SR-RT is a feasible approach for isolated local recurrent primary prostate cancer, offering excellent in-field tumor control and a low toxicity profile. Further investigation with a bigger number of pts is warranted to identify the patients who benefit most from this treatment modality

EP-1115
Accuracy of set-up position in lung SBRT
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Purpose/Objective: Stereotactic lung tumor radiotherapy are frequently only one therapeutic option in non-small cell lung cancer patients without regional and distant metastases who are inoperable due to medical reasons or refuse surgery. In Centre of Oncology in Krakow SBRT protocol has been implemented in 2010. Aim of this study is to assess verification of set-up position before treatment and early results of the treatment.
Materials and Methods: 26 previously untreated NSCLC patients were irradiated. Dose ranged from 24 to 60 Gy in 2-5 fractions (depended on dose constraints at organs at risk and tumor location). Patients were in supine position with his hands above head, immobilized using individual polystyrene-foam form. Planning was 4D computer tomography based. Irradiation was carried out on the accelerator with the verification of placement based on CBCT (Cone Beam CT). Shifts of the table were measured before each fraction.
Results: The median follow-up period in patients undergoing radiation therapy was 9 months. Three tumor progression occurred after approximately 6 months (in two cases metastatic tumor, in one case tumor with central location). Local control rate was about 87%. Radiation tolerance was good, only one patient had shortness of breath, which subsided after the administration of steroids. Shifts in the X-axis table ranged from 0 to 15 millimeters (mean - 3.5 mm, median - 3 mm, SD - 3 mm, 83% of all shifts ranging from ±2mm of the measurements). The Y axis ranged from 0 to 10 millimeters (mean - 3 mm, median - 3 mm, SD 2,3 mm, 99% of all shifts ranging from ±2mm), and the Z-axis from 0 to 8 mm (mean - 2 mm, median -2.5 mm, SD - 2.8 mm, 84% of all shifts ranging from ±2mm).
Conclusions: Preliminary results of stereotactic radiation therapy of lung tumors are similar to the results reported by other authors. Consequently, the data relating to the accuracy of set-up was included in the updated treatment protocol.

EP-1116
Management of artero-venous malformation (AVM) with stereotactic radiosurgery: a dose comparison evaluation
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Purpose/Objective: Resection is often the first option recommended for patients with smaller AVMs in noncritical areas of the brain; but some AVMs are inoperable due to their large size, eloquent location, deep venous drainage, and/or other anatomical considerations that are associated with unacceptably high rates of morbidity and mortality. Stereotactic radiosurgery (SRS) has been widely used to treat intracranial AVMs of complex anatomical location too. We reviewed our experience with radiosurgery of AVM with particular attention to clinical response and toxicity with different delivered dose.
Materials and Methods: From January 2009 to November 2011, 22 patients with diagnosis of AVM were treated at San Camillo Forlanini Radiotherapy department. Median age at SRS was 36,14 years (range 11-63). 12 AVMs (54,5%) were located in brain left side with a prevalence involvement of the frontal lobe (5 left/2 right), parietal lobe (4 left/2 right), temporal lobe (3 left/2 right), occipital lobe (1 left/2 right) and one sited in left cerebellum. We compared two groups of patients: in the first group (15 pts-68%) delivered dose was 20 Gy with a median volume of 2.03 cc (0.1 – 6.7 cc); the latter group (7 pts-31,5%) received 16 Gy or less on a median volume of 8.97 cc